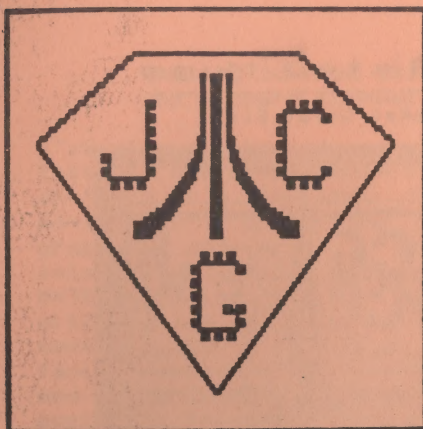




JACG JACG

NEWSLETTER
Vol. 4 No. 2

Oct. 1984

Single Copy

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THE JERSEY ATARI COMPUTER GROUP

From the Editor's Desk...

Up to the death of J. Edgar Hoover in 1972 there used to be a joke amongst Washington bureaucrats: "If you've seen one FBI Director, you've seen them all." Until this month the same bromide would have applied to the JACG. With the retirement of Dick Kushner we begin a new step in the evolution of our organization. The second president will be determined this month. Whoever takes over the reins will, in no small way, determine the fate of the JACG for years to come.

These are uncertain and possibly turbulent times in the world of Atari users. Over the years we have been given false promises, had our hopes raised and dashed, watched in sideline horror as inept after inept management decisions were forced upon us, and suffered the humility of friends who shook a finger and pointed to the early grave suffered by TI.

In spite of all these irritations and indignities we knew that the Atari PC was still head and shoulders above anything else the electronics community offered at any reasonable price. We persevered and forged ahead, a little like the bumblebee which aeronautically can not fly but does it anyway. We tend to proselytize. It becomes, for many of us, a driving need to show the newcomers that the best thing they can possibly do is decide for Atari. We gather our disciples around us.

As our ranks continue to grow it seems that we need to look after our collective needs. It appears that Atari, Inc. may not be concerned with that issue. There is a tremendous base of Atari users out in the real world. Guesstimates place it well over a million and if Tramiel's plans for Christmas materialize with a really cheap 800XL system that number will swell. If so, the formation of AUGI (Atari User Groups International) is essential to our welfare. This group will provide the common denominator and serve as spokesperson to Atari with a lot of economic force. Money clearly talks to the new administration of Atari.

So, Mr. or Madam President, it is incumbent on you to carefully plot and monitor our future. We are, immodestly, one of the leading user groups in the country. Our peers clearly respect our decisions and they know that we do act with definition. Let the JACG become, with your administration, the strong director of our computer-destiny. You have our full support.

Frank Pazel
Editor-in-Chief, JACG Newsletter

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MARK YOUR CALENDARS!!

JACG Meeting Schedule

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November 10, 1984

December 8, 1984

January 12, 1985

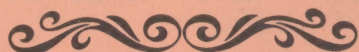
AND NOW A WORD FROM THE PRESIDENT....

It all started in a log cabin in New Jersey. In the dead of winter, with no more coal to burn in the stove, five young boys huddled over the keyboard of a computer. The wolves howled outside, sensing the growing desperation in the tiny cabin. No money was available to buy coal or software. And so, in a galaxy far, far away, in a time long, long ago.....

I guess that isn't exactly how JACG got started, but you know how myths depart from reality with the passing of time. Our start, however, was about on that scale - five stranger getting together in the wilds of Hunterdon County to try to figure out how to master that thing called an Atari computer. The rate of our growth and our ability to outstrip the size of meeting places may also be the stuff of fairy tales, but it's all true. The truth of JACG is in a world of more than 550 members, with educational, entertaining meetings, a newsletter second to none in the country, a software library of gigantic proportions, an electronic bulletin board with no parallel. And so it goes...

And now I sit here writing my last column as JACG President. When I thought about writing this and getting up before you at the October meeting it seemed that there'd be nothing to this letting go. But there is. I'm more emotionally attached to JACG than I realized. Oh, I always knew that I've made many really good friends over the years. And I knew that I was very proud of how this group has grown and prospered and my part in making that happen. But there is more to this feeling than even that. I've been near the center of a revolution that will probably outstrip the industrial one. I've had a chance to meet and talk to some of the movers of that revolution. I've had the opportunity to share my knowledge with all of you. I'm very pleased to have had the opportunity to serve as your President all this time. My \$800 8K Atari 800 has given me a million dollars worth of memories, experiences and joys. Thanks for all the positive feedback I've received and the help that a number of you have given. Together we made JACG one of the outstanding computer groups in the country. Together we will continue to grow in our knowledge and friendship.

Richard Kushner - JACG President



HAVE YOU RENEWED
YOUR MEMBERSHIP?

CHECK YOUR MAILING LABEL
FOR MEMBERSHIP EXPIRATION DATE

JACG Insulated Mugs

Fund Raiser Makes Great Gift



Pictured above are samples of the insulated mug being sold to JACG members for only \$3.00. The mugs are high temperature polystyrene and boast the JACG logo and newsletter emblem imbedded inside the insulating air jacket. The mug will keep your favorite beverage hot or cold for long periods of time and will not sweat on your computer desktop like other lesser engineered containers.

Buy some of these good looking mugs for you and your friends and help the JACG treasury at the same time. The mugs are available from newsletter editor Frank Pazel who conceived and implemented the project.



Jack-O-Lantern
(Tramiel?)

Logo Art by
Frank Pazel/JACG

Getting Down to **BASICs**
by Richard Kushner - JACG

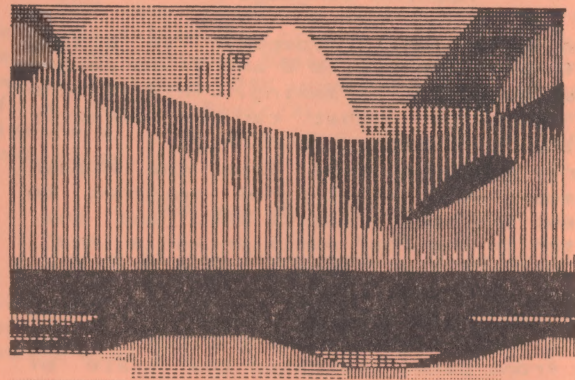
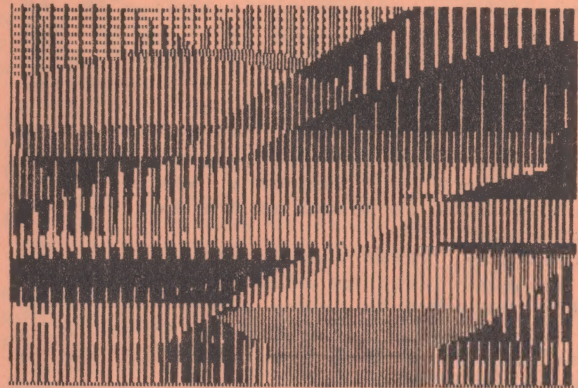
I've always been interested in graphics. This is one of the main reasons why I got an Atari at a time when it's only known advantages over the Apple were its graphics and price! So I was very interested in the September '84 issue of BYTE magazine which featured several articles on graphics and animation. Now, most of the information was from very fancy, expensive computers. But there was one program written in AppleSoft BASIC exploring "fractals" (as used by LucasFilm in the program "Rescue at Fractalus") and another (also in AppleSoft BASIC) which generated nice patterns using the SIN(X) function. This program produced "landscape"-like pictures and, so, is called SINESCAPE. I, of course, proceeded to rewrite this program for the Atari. I first did it in GRAPHICS 8 and then tried GRAPHICS 15. Recall that GRAPHICS 15 is not directly addressable on the 400 and 800 Ataris, but is on the XL series. I have listed GRAPHICS 15 version of the program at the end of this article and I now throw out a challenge to all of you to rewrite the program to do the following: 1- work in GRAPHICS 8, 2- work in GRAPHICS 15 on a 400/800, 3- work with other graphics modes (GRAPHICS 10 might be interesting), 4- do any other interesting things your imagination can dream up. Send in your results and we'll use them in our newsletter. Who is brave enough to accept the challenge? What are you waiting for? To your keyboards!!!

Next month, we'll look at the fractal program, talk a little about fractals and explore what the BASIC programmer can do with them.

```
10 REM SINESCAPE BY DANIEL COOPER
11 REM FROM BYTE MAG. SEPT '84
12 REM MODIFIED FOR ATARI GR. 15
13 REM BY RICHARD KUSHNER - JACG
20 GRAPHICS 15+16:COLOR 1
30 FOR T=0 TO 191 STEP 2
32 PLOT 0,T:DRAWTO 159,T
36 NEXT T
40 A=INT(RND(0)*200):REM PHASE SHIFT
50 N=INT(RND(0)*58)+20:REM FREQ.
60 Z=INT(RND(0)*92)+50:REM AXIS LOC.
70 ZF=Z:IF Z>96 THEN ZF=96-(Z-96)
71 REM : HEIGHT FACTOR
80 W=INT(RND(0)*ZF):REM CURVE HT.
90 IF W<10 THEN W=10
100 G=INT(RND(0)*4)+1:REM STEPSIZE
110 C=INT(RND(0)*4):REM COLOR
112 COLOR C
120 REM PLOTTING ROUTINE
130 FOR X=0 TO 159 STEP G
140 Y=SIN((X+A)/N)*W+Z
150 PLOT X,Z:DRAWTO X,Y
160 NEXT X
170 GOTO 40
```

Editor's Note: After running this program on an 800XL I picked up the gauntlet very weakly and rewrote Dick's program to at least run on the 400/800. It is offered here as an incentive for someone to do it right. The graphics generated look like the picture below but must be seen in color to do them justice.

```
10 REM ---QUICK & DIRTY MODIFICATION
11 REM ---OF KUSHNER PROGRAM IN GR.23
12 REM ---BY FRANK PAZEL SO THE CONCEPT
13 REM ---CAN BE SEEN ON THE 400/800.
14 REM ---TAKE TIME TO REWRITE IT CORRECTLY.
15 REM ---COLORS ARE MORE VIVID WITH COLOR 2
20 GRAPHICS 7+16:COLOR 2
30 FOR T=0 TO 95 STEP 2
32 PLOT 0,T:DRAWTO 159,T
36 NEXT T
40 A=INT(RND(0)*200)
50 N=INT(RND(0)*58)+20
60 Z=INT(RND(0)*75)
70 ZF=Z:IF Z>96 THEN ZF=96-(Z-96)
80 W=INT(RND(0)*ZF)
90 IF W<10 THEN W=10
100 G=INT(RND(0)*4)+1
110 C=INT(RND(0)*4)
112 COLOR C
130 FOR X=0 TO 159 STEP G
140 Y=SIN((X+A)/N)*W+Z
142 IF Y<10 THEN Y=1
144 IF Y>95 THEN Y=95
150 PLOT X,Z:DRAWTO X,Y
160 NEXT X
162 POKE 77,0:REM ---DISABLE THE ATTRACT MODE
170 GOTO 40
```



What Language Does Your Atari Speak?:
A Guide to Programming Languages
Available for the Atari Computer
By Arthur Leyenberger - JACG

Copyright (c) 1983 by Arthur Leyenberger

This is the first part of a series of articles dealing with programming languages available for the Atari computer. Over the past two years, there have been various articles in the JACG Newsletter discussing this or that language but there has been no attempt to discuss them within the context of how they compare with each other.

Many people think of the Atari computer as merely a "game" machine. Indeed, it functions superbly in this role but the uninitiated user does not realize that beneath the hood of the Atari 400/800/1200 and XL computers is a serious microprocessor that can be used with over ten different programming languages. These range from the venerable Basic (3 different dialects) to the esoteric LISP.

In an effort to give both the experienced and novice user an introduction to these capabilities, this series of articles will present an overview of the programming languages currently available for the Atari computer. The intent here is not to give you an in-depth tutorial on each of these languages, but rather to increase your awareness of the potential of your computer (I assume that you already own at least one Atari computer).

Learning a new computer language is no different than learning any other new activity. A good book on the subject will go a long way towards helping the neophyte. At the end of the series I will include a brief description of some useful books on the various computer languages. I will make an effort to indicate whether the particular book is aimed at the beginner or advanced user.

Hopefully, after reading this article, your interest will be aroused and you will have the ambition to learn a new language. Maybe the result of your efforts will someday appear in this newsletter or be a commercial product.

Machine Language

Programming a microcomputer in binary form (using the digits 0 and 1) is called machine language programming. This is the only language that can be directly understood by a microprocessor.

Early microcomputers like the Altair and Imasai used front-panel switches to represent the binary digits zero and one. A switch in the "on" position was a "one", in the off position "zero." Some switches represented instructions and others represented the memory address of the instruction. Light-Emitting Diodes (LEDs) on the front panel indicated the state of the switches. However, the process of

flipping a dozen switches to manually enter the instructions and memory locations was tedious and subject to much error. Fortunately, the Atari computer is not programmed this way.

Assembly Language

Machine-language programs are almost impossible for humans to read, so symbols are used to represent the instructions. These symbols are called mnemonics (memory aids), and the 6502 microprocessor in the Atari has a unique set of them.

The process of using these mnemonics to write a program is called Assembly Language programming. The program that translates the assembly language source code into the machine language object code is called the Assembler. Some Assembler programs have the capability of creating and using a collection of routines called macros, and are therefore called Macro Assemblers. A macro is a collection of one or more statements that have been previously defined in the program which may be called by a single mnemonic. It will cause one or more machine instructions to be assembled and the binary code generated.

Although not as difficult to use and debug as machine language code, assembly language is still optimized for the machine, not the user. There are approximately six different Assembly Languages for the Atari computer (see Table 1). They vary in their complexity, flexibility, size and ease of use. If you are interested in learning how to program in Assembler, it is important that you use a good book since the language packages themselves rarely have any tutorial information. In fact, this is true for any of the programming languages mentioned in this article.

Disk Operating Systems (DOS)

A disk-operating system (DOS) is the control language that makes everything in the computer work. The DOS contains all of the system utilities used to format diskettes, copy files and entire disks, and make a back-up copy of the disk system. It also provides the input/output control for the language currently running on the computer.

The Atari 810 disk drive uses a single density disk-operating system (DOS 2.0S). The new Atari disk drive (Model 1050) is capable of running the new DOS 3.0D. This DOS increases the storage capacity of the disk drive to 127K Bytes (about 1-1/2 times the capacity of the 810). The language and the application programs that you choose all depend upon the operating system that runs on the computer. Sometimes a specific application program (like Letter Perfect by LJK) uses its own DOS. Usually, you can only run programs that use the DOS that comes with the

computer. The Percom double density disk drive also has its own DOS. There is even a separate DOS called K-DOS which is especially useful to Assembly Language Programmers.

K-BYTE's DOS is a Disk Operating System for the Atari computer and is an alternative to Atari's Disk Operating System, DOS 2.0S. It offers a greater level of control over devices and memory and appeals mainly to advanced programmers.

One of the main differences between K-DOS and Atari DOS is that K-DOS is memory resident. This allows most of its features to be readily accessible, but at the expense of using more memory. In fact, when a Basic cartridge is inserted, the amount of free memory available is approximately 7K Bytes less than with Atari DOS. Part of this increased size is the due to the english language error messages that are used, rather than less memory consuming error numbers.

In addition to providing improved DOS commands, K-DOS contains a complete machine language monitor. This enables you to examine and alter memory in either HEX or ACSII format and to execute a machine language program in two ways. Also, certain DOS routines may be accessed by one-word commands.

BASIC (Beginners All-purpose Symbolic Instruction Code)

Basic is the most popular of all computer languages. It is also the most versatile. Not really one language, Basic is a family of languages having a common core. The major differences in dialects are a result primarily of the different graphic commands peculiar to the specific computer. Basic was invented in 1963 at Dartmouth College by Professors Kemeny and Kurtz to enable non-computer science students to use the school computer. A Basic program consists of statements on numbered lines which are executed one at a time. The program can be made to jump around successive statements, or to other sections of the program, and then return to execute the next line in the program. Control of the program operation is executed via a few easily learned commands, such as PRINT, GOTO, READ, and INPUT.

Basic has become popular mainly because it is so friendly. Other computer languages are complicated and use unfamiliar words, symbols, and syntax. Basic speaks a very simple English, using only a relatively small number of words that can be understood from the start.

Basic does have some drawbacks due to its inherent lack of structure. It is often said that, in Basic, programmers have too much freedom to jump around. If a complex Basic program is not well documented with comments, it is difficult for even the author to understand the program. Although Basic is simple, it must

be "spoken" with precision and it will not tolerate sloppiness. There are a few ground rules that must always be followed.

There are three versions of Basic for the Atari computer. Atari Basic is the most popular and was the first version available. It exists on an 8K ROM Cartridge and is now built into (Revision B) the Atari XL computers.

Basic A+ by OSS

Atari 8K Basic (the cartridge) was originally developed by Optimized Systems Software (OSS). Basic A+ is an extension of the original language that includes over 40 new features and functions. It comes on a disk and occupies approximately 16K of memory.

Many people feel that Basic A+ is the Basic that Atari should have released initially if they had not been in such a hurry to get a product out the door. In any case, Basic A+ is easier to use than Atari 8K Basic and allows the programmer the ability to add structure to his or her programming. This is done with statements like: IF..THEN..ENDIF and WHILE..ENDWHILE. PRINT USING allows formatted output to either a printer or the screen.

Other improvements include a TAB function, an INPUT statement that allows a self-trapping prompt (it will automatically re-prompt if the input causes an error) and the ability to use subscripts with the INPUT and READ statements. Additional string handling functions are provided such as concatenation and the ability to search for a substring with the FIND function.

A couple of nice debugging functions are included. TRACE allows meaningful error messages to be displayed when testing a program. IF ERR is a function that can test error conditions and direct program flow. Also, groups of lines may be deleted at once with the DELETE command.

One of the best features of Basic A+ is the extensive set of Player Missile Graphics commands. These functions make PM graphics as easy to use as PLOT and DRAWTO. In addition to these 14 commands, the joystick commands have been re-done to be easier to use and yield better movement.

OSS has recently introduced a new language called Basic/XL. This language is really an upgraded Basic A+ that comes on a bank-selectable 24K upper-Cartridge instead of a disk. Basic/XL has been covered elsewhere in previous issues of this newsletter.

See you Next Month

That's it for this month. Next month I will pick up the discussion with Atari Microsoft Basic. Then we'll talk about Pascal, C and maybe even LISP. So be sure not to miss it.

G E M I N I S

ATARI COMPUTER & ACCESSORY BUYER'S GUIDE

 * ATR8000 COMPUTER *

16K COMPUTER\$359.95
 Parallel printer port, serial
 modem port, disk dr controller
 and printer buffer

64K 280 COMPUTER469.95
 with CP/M - 5-1/4
 Parallel printer port, serial
 modem port, disk dr controller

CO-POWER 88/128K 359.95

CO-POWER 88/256K 449.95
 with MS.DOS - 5-1/4

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 * ATR8000 CABLES *

ATR8000 CPU TO
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 Parallel Printer 29.95
 1-Disk Drive 19.95
 2-Disk Drive 24.95
 4-Disk Drive 29.95
 RS232 Terminal 29.95

5-1/4 to 8 Adapter19.95

 * ATR8000 SOFTWARE *

CP/M 2.2 - 5-1/4 89.95
 MY.DOS - 5-1/4 24.95
 AUTOTERM 80 - 5-1/4 27.95
 Software 80-column display
 CP/M 86 - 5-1/4 74.95

 * ATR8000 DISK DRIVES *

5001 SINGLE 5-1/4\$209.95
 Single sided, double density
 40 track without controller
 with power supply & cabinet
 (Tandon TM100-1)

5004 SINGLE 5-1/4 284.95
 Double sided, double density
 40 track without controller
 with power supply & cabinet
 (Tandon TM100-2)

5201 SINGLE 5-1/4 1/2 HGT 299.95
 Double sided, double density
 40 track without controller
 with power supply & cabinet
 -has blank filler for addition
 of second drive at later date
 (Teac 55B)

5202 DUAL 5-1/4 1/2 HGT ... 499.95
 Double sided, double density
 40 track without controller
 with power supply & cabinet
 (Teac 55B's)

2255 SINGLE 5-1/4 1/2 HGT . 214.95
 Double sided, double density
 skeleton drive for addition
 to existing half height unit
 (Teac 55B)

1251 SINGLE 5-1/4 FULL HGT 214.95
 Double sided, double density
 skeleton drive (no cabinet or
 power supply)
 (Tandon TM100-2)

9301 PWR SUP & CABINET 59.95
 for single full height drive

9302 PWR SUP & CABINET 69.95
 for dual half height drives

SWP
 MICROCOMPUTER PRODUCTS, INC.

SEPTEMBER MEETING HIGHLIGHTS

Reported by
Joseph S. Kennedy

Following the usual format Dick Kushner opened the meeting with announcements and comments as follows:

1-The group is still in need of an advertising manager to replace Herb Lehner.

2-The book "Computer Animation Primer" by Fox and Waite from McGraw-Hill is on the market. This book is recommended by Dick Kushner and Don (Mr. Forth) Forbes. It deals heavily with the capabilities of the Atari machines.

3-Frank Pazel will be selling mugs with the JACG logo encased for posterity in a thermal plastic jacket. This is a fund raiser for our group.

4-Taricon was somewhat less than anticipated after a 13.5 hour drive. Most conspicuous in their absence was Atari Corp. However, Taricon did provide the meeting place for the formation of AUGI - Atari Users' Groups International.

5-In the September 2nd issue of the Philadelphia Inquirer there was a most interesting article on Jack Tramiel and what makes him tick.

6-The group will sell a set of mailing labels to Gemini.

Scott Brause detailed the problems encountered in attempting to set up the Bulletin Board with a hard disk system. Due to the difficulties the board will be up and running in a few days with some more reliable 8" drives.

Scott also demoed Excalibur by Chris Crawford. Scott had good things to say about the game except for the amount of time spent waiting for the numerous disk reads to be completed.

Chris Ahlers of Dependable Parts gave us the latest on the warranty/repair situation with Atari. In summary, Dependable will continue to service Ataris for out of warranty repairs, while warranty repairs will be handled through an equipment exchange by the dealers. Chris also gave an excellent service clinic in the form of answers to the members questions.

From Art Leyenberger's shopping bag this month the following came:

1-Financial Cookbook from Electronic Arts was demoed. This is best described as all you ever did and didn't want to know about things financial.

2-Writer's Tool from OSS was demoed also. This is a new word processor with some nice features.

3-What would a meeting be without at least one game from Art? This month it was Realm of Impossibilities from Electronic Arts. This program is the game Zombies repackaged by EA.

4-Art also showed us the new remote joysticks that the group purchased for demos. Who knows- with 9 volt batteries perhaps we'll have Art's Arcade from the balcony next month.

Elections are on the agenda for October. Be there!!

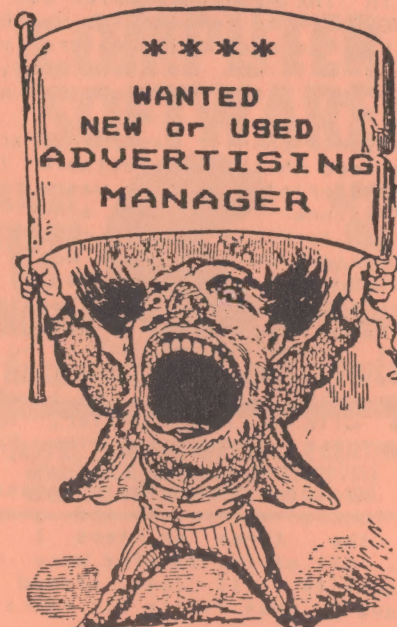
JACG MEMBERSHIP

The Jersey Atari Computer Group (JACG) invites you to become a member. Dues are \$20.00 per year and entitle the member to: 1) Receive the monthly newsletter; 2) Purchase programs from the group's extensive tape and disk libraries at special rates; 3) Join special interest groups or form new ones; 4) Benefit from the expertise and experience of other Atari computer users; 5) Participate in group purchases of software at substantially reduced prices; 6) Receive a membership card that entitles the member to discounts at local computer stores; 7) Attend monthly meetings to learn about the latest hardware and software, rumors, and techniques for getting the most out of your Atari computer; 8) Submit articles and programs to the newsletter and give demos and presentations at the monthly meetings; 9) Participate in sale/swap activities with other members; 10) Access the JACG nationally famous Bulletin Board; and 11) Have a lot of fun.

If all of this sounds good to you send a check or money order, payable to JACG, to:

Ron Kordos
201 Lake Valley Road
Morristown, NJ 07960

Remember, receiving the JACG newsletter is just one of the many benefits of being a member of JACG.



Panasonic KX-P1090 Printer Review

by
Kenneth Pietrucha

If you have ever had a program that did some calculations for you and then you had to copy the results from the screen by hand, you know the value of a printer. Having reached that point many times, it was apparent a printer was necessary. After a few weeks of looking and reading, I set the price I was willing to pay for a printer at \$300. Anything over that range had features which were overkill for my applications.

After an early morning trip to Gemini, I was home unpacking my new Panasonic Dot Matrix Printer. The model KX-P1090 is in a class with the Gemini 10X and the Epson RX-80. If you look at the printing mechanisms, they all look pretty much alike. Externally the top of the printer has the normal line feed, form feed, on line switch and indicators for On Line and Out of Paper.

The Panasonic printer has the capability of printing ordinary characters in PICA or ELITE pitch as well as:

compressed characters,

ELONGATED characters,
superscript, subscript
and italics.

Combinations of some of the former are possible. Using the combination of Elite and Condensed, a 158 character line is possible. Printing speed is approximately 100 CPS and is bi-directional.

One of the features which impressed me was the ribbon. Unlike other printers where the ribbon runs the width of the machine, the Panasonic printer has a seamless ribbon in a cassette. The cassette has a rectangular hole in the middle and clips over the print head, making ribbon changes a snap, both literally and figuratively. The cassette has a built in ink reservoir which can be used ONE TIME ONLY to refresh the ribbon. I have not had to use this feature yet. With a life of millions of characters, I doubt I will be using it in the near future.

The Panasonic printer has both tractor and friction feed which is selectable from the top of the printer. This was a very desirable feature for me since my handwriting is terrible and I resort to small typewritten notes which would be impossible without the friction feed.

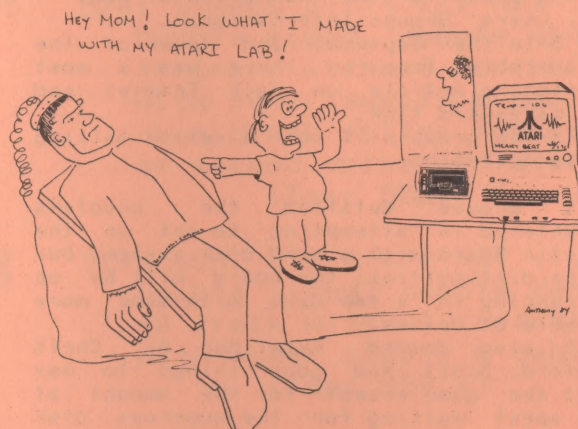
As for printer codes, the Panasonic seems to be Epson compatible. I have used it to print screen graphics, using a commercial screen dump, by telling the program I was using an Epson. As I write this article with my Atari Writer, I am using the printer driver for the Epson RX-80.

Before deciding on the Panasonic printer, I looked at print and graphic samples on the three printers I was considering. All of the samples were very close in quality. It just seemed the Panasonic gave me that little bit extra for my money.

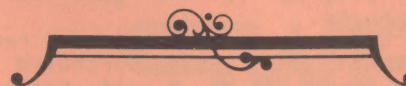
Even the manuals seem to have been prepared with extra care. Notice, I said manuals. The first manual contains 54 pages with pictures, diagrams and instructions on everything from initial set-up and self-testing to replacing the print head. The second manual is a 26 page supplement programming guide which explains all the printer commands with short basic demonstration programs.

On the negative side, the Dip switches are on the bottom of the printer which necessitates turning the printer on its side and setting the switches with a pencil point. The cable plug on the back of the printer is in just the right spot to interfere with the paper feed. I have to reposition the cable every so often when I hear it scraping the edge of the paper.

Aside from these minor annoyances, and keeping in mind there is no free lunch or perfect printer, I would highly recommend the Panasonic printer to anyone shopping in this price range.



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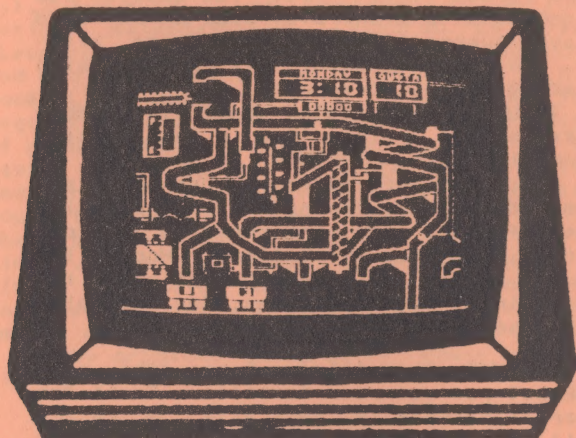


GIVE A BIT!!!

Contribute to the Newsletter this month.

A REVIEW OF GUMBALL
by Richard Kushner - JACC

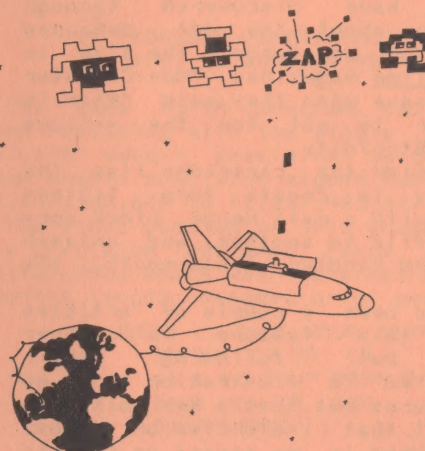
I rarely write reviews of games. Most of the games on the market today are too difficult for the average middle-aged human to figure out, let alone master. I have often been frustrated by the requirement that the player be able to look in two directions at the same time, fire a laser gun and maneuver around a maze or over a landscape or GUMBALL by Broderbund is really no exception to the above comments. But I'm getting ahead of myself



As a "gumball sorter" in the Sticky Sole Gumball Factory you are required to sort several different colors of gumballs into different bins on wheels. The factory is a weird and wonderful assortment of Rube Goldbergian devices: wheels, wormgears, belts, pulleys, conveyor belts, and multiple chutes. You sort the gumballs by moving the bins underneath different chutes as the balls roll down from the top of the screen. So far, so good. The bins are hooked together like a little train and move together. This constitutes complication #1. The balls roll down some very circuitous paths and you control their journey by pressing the fire button to flip deflectors along the way. This is complication #2. There is usually more than one ball rolling around at a time. This makes for complication #3. If a ball falls into the wrong colored bin, your boss, Mr. Nitpicker, comes out, shakes his fists at you and tips over your bin, dumping out all the balls you have managed to accumulate so far. Complication #4. You have a time limit of one very short work shift to meet your quota. Yes, this is complication #5. If you miss too many balls your quota goes up, right before your eyes. #6, if ever I heard of one. There are also multicolored gumballs from time to time that must be directed to a particular disposal chute or your score is penalized. Complication #7. And this is just the first level of the game! At higher levels things move faster, there are more different colored gumballs with their attendant matching bins to mate with, and overzealous dental assistants add dynamite to the sugar supply in an attempt to blow up the factory! You have to deactivate these gumbombs by pressing the spacebar to get a crosshair cursor which enables you to

defuse the bomb. Fortunately, ESCape pauses the game giving you time to collect your wits and breath.

Level 1 is manageable, even by me. Between levels you get an intermission show. It depicts the worker (you) going to his modest home for a well-earned rest. As you progress in ability and production each intermission shows a more luxurious abode until finally, after a long and arduous career, you are rewarded with retirement. Don't plan on it. The graphics are very nice, and I'm sure the game will be fun for a few days. And, after all, what more did you really expect from any game? Have fun and enjoy it. At least it's non-violent. By the way, I relieve some of my tension during play by popping a couple of real-life gumballs in my mouth before pressing the START button. You might want to do the same or you could end up with a dehydrated tension tongue. What do you know; GUMBALL is more like real-life working than I thought.



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Atariwriter Underground Part I

by Frank Pazel - JACG

The Form Letter

The good folks at the former Atari Inc. gave us what is probably the best word processor for any PC, bar none. It is easy to learn, handles just about any kind of request, is loaded with features, and is absolutely dirt cheap. With the advent of the APX Printer Driver almost any printer works with it and the use of Atspell is a godsend to those less lexical. It is, in short, superb.

Now, these very same departed programmers had a few tricks up their collective sleeves when they put this ROM together. They weren't entirely honest in reporting all the swell surprises packaged inside this 5 cubic inch marvel. Or perhaps they told all but between technical writer and manufacturing much was lost. In any event, in two parts I am going to try to report what I have gathered from various sources and have discovered through experimentation about the oft demeaned Atariwriter. (Who can forget the slap in the face from Time magazines "Man-Computer of the Year" issue when they said "Atari's word processor is not for the serious user.") Shame. Stupidity.

Hidden inside the cartridge lies the latent ability to create form letters automatically with a mail merge, block copy text from one file to another, and unleash a resident modem handler. This month, the mail merge.

There have been a couple of articles written on this feature in other newsletters but following their instructions led to frustration and no results. It turns out that a key point was always left out that I stumbled on almost by accident. Here is my report on how to get your Atariwriter to function as a bonafide business type form letter producer.

A form letter, for definition purposes, is a document which will have certain parts of it contain personalized information. The bulk of the letter is the same for each addressee. You get these things in the mail every week telling you how you might just have won 10 billion dollars. Suppose you have the need to produce such a letter. Perhaps your club needs to send out a mailing which would be nice to look personalized, or might attract more attention if the receiver's name appears inside the text. Using normal Atariwriter functions write the letter. However, wherever you want to personalize the text hold down the OPTION key and press the INSERT key at the same time. An inverse ESCape character will be printed on the screen in that position. Later on, when you ask Atariwriter to PRINT your document the program and printer would normally halt and allow you to type in the missing information. This procedure is detailed on page 39 of the Atariwriter manual. As the manual says, "...leave blanks in a text file...and fill them in each time you print the file." The

underlining is mine. This is exactly what we want to avoid. We want to create a file which will automatically merge with our letter file and insert the missing information for us.

When you are sure your letter is exactly like you want it SAVE it. Make accurate notes of how many blank items you need to fill in and what the information needs to be. For example, the first three ESCape characters might represent name, street address, and town and state. Create a new file in the following manner.

1. Enter the Editor and delete the entire format line. Yes. You should now be looking at a blank blue page which used to have inverse letters with numbers after them. This is the absolutely crucial step in making this process work.

2. Using your notes about the empty blanks in your letter type in the missing information with a RETURN at the end of each piece of information. Use no blank lines and continue typing in your repeating series of data. You are creating a "sort of" data base for the letter. Hopefully, you will design it so it can be used for other things. The addresses, for example, can be used to make up labels later on.

3. SAVE this file. I use the name MERGE but you use your favorite. Count the number of records in this file. A record is all of the information you need to print one letter. It might be something like name, street, and city-state. The number of records will equal the number of different documents you are going to print. You have ten different names with addresses in your MERGE file; you are going to print ten different personalized letters.

4. LOAD your letter into Atariwriter. Turn on your printer. Position your paper. Begin the PRINT series. At the prompt "PRINT WHOLE DOCUMENT?" answer Y.

5. At the prompt "NUMBER OF COPIES" type in the number of letters you are going to print. This number should equal the number of records in your MERGE file. The maximum is 99.

6. At the prompt "MAKE ENTRY, PRESS RETURN", hold down the Control key and press V (CTRL-V) and you should hear the one key click. Now type in the specifications of your data file, e.g., D:MERGE. Make sure your MERGE file disk is in your active drive.

7. As soon as you press RETURN the printer should come to life and begin churning out your form letters. If you have specified right hand justification (J1) each letter will be printed with the personalized information properly justified. It's near magic!

Some of this information comes by the way of the San Leandro (CA) Computer Club which reports a mysterious interoffice memo at Atari briefly outlined its existence and use. Who knows? I collected bits and pieces here and there, from newsletters, talking to people, and just plain dead-end trying. The procedure works. And it makes what is the most versatile and valuable PC glitter on another facet of its diamond-studded personality.

NEXT MONTH: Block text moves between files and modem to modem.

Number Crunching in Forth

by Kenneth Pietrucha - JACG

My first encounter using Forth to manipulate numbers was somewhat of a disappointment. Since my hobby is recreational mathematics, I had planned to convert a simple BASIC program to Forth. I was aware of Forth's inability to handle decimal numbers and decided to run a Fibonacci sequence composed of only integers.

The sequence which starts 1,1,2,3,5,8,13,... is credited to a 13th century mathematician, Leonardo of Pisa. (Leonardo was the son (figlio) of Bonaccio and was therefore called Fibonacci.) In his book, Liber Abaci (Book of the Abacus), the sequence was used to describe how many pairs of rabbits there would be in a year if we assume every pair of rabbits produces another pair every month and start producing young two months after their own birth. What sounds complicated is really quite simple. The next number in the sequence is always the sum of the two numbers before it. In the sequence listed above, the next number would be 21 followed by 34 and so on.

The original program in Basic looked like this:

```
10 A=1:B=1:PRINT A:PRINT B
20 C=A+B:PRINT C
30 A=B:B=C
40 GOTO 20
```

When the BASIC program was run it calculated the 49th number in the series as 7,778,742,049 and the 50th number went into scientific notation. Atari BASIC can handle numbers up to 10 digits. Since the 50th number was 12 billion plus or 11 digits, its integer range was exceeded. (when run on the IBM PC, the computer went to scientific notation after printing the 35th number, although double precision is possible.)

The same sequence in Forth was written as a new word "FIB" and defined as:

```
: FIB 1 DUP DUP
  CR . CR . CR
  25 1 DO DUP ROT +
  DUP . CR LOOP
  DROP DROP;
```

When the word "FIB" is executed, the program was suppose to do exactly what the BASIC program did. It printed all numbers correctly down to and including the 23rd number (28657) and then went crazy. Another of Forth's characteristics is it can handle signed numbers only in the range of -32,768 to +32,767. Even when I declared them unsigned, the range was still only 0 to 65,535.

I found I really needed a set of double precision words to allow me to use signed and unsigned numbers to the maximum capability of Forth. The following two screens are the result of my search for new words.

The first screen defines the words ROLL and PICK which will be used in the second screen when defining the double precision words.

SCREEN #1

```
00 (STACK OPERATIONS)
01 :ROLL DUP 1=
02   IF DROP ELSE DUP 1
03   DO SWAP R> R> ROT
04   >R >R >R LOOP
05   1 DO R> R> R>
06   ROT ROT >R >R
07   SWAP LOOP THEN;
08
09 :PICK 2* SP2 +
10   ?;
11
```

SCREEN #2

```
00 (DOUBLE PRECISION WORDS)
01 :D- DMINUS D+ ;
02 :2DUP OVER OVER ;
03 :2DROP DROP DROP ;
04 :2SWAP >R ROT ROT R> ROT ROT ;
05 :2OVER 2SWAP 2DUP >R >R 2SWAP
06   R> R> ;
07 :2ROT 6 ROLL 6 ROLL ;
08 :D* OVER 5 PICK U*6 ROLL
09   4 ROLL * + 2SWAP * + ;
10
11 (DOUBLE-LENGTH UNSIGNED)
12 :UD. <# #S #> TYPE SPACE ;
13
```

The same Forth program can now be written replacing all the single precision words with double precision words for a maximum double precision signed number range of -2,147,483,648 to +2,147,483,647.

The final version of this program has a double precision unsigned range of 0 to 4,294,967,295, which was obtained by using the double length unsigned print word UD.

```
: UDFIB 1. 2DUP 2DUP 2DUP
  CR UD. CR UD. CR
  46 1 DO 2DUP 2ROT D+
  2DUP UD. CR LOOP
  2DROP 2DROP ;
```

As written the program will print out the 47th number in the series (2,971,215,073), which is many times larger than what was possible before the introduction of double precision numbers.

The definitions for ROLL and PICK are from Leo Scalnon's book Forth Programming, and the majority of the double precision words are from Alan Winfields's book The Complete Forth.

To summarize, the word PICK is a Forth-79 word which allows you to copy any number in the stack onto the top, so a 1 PICK = DUP and a 2 PICK = OVER. If you wanted to copy the 6th number on the stack it would be difficult without a 6 PICK.

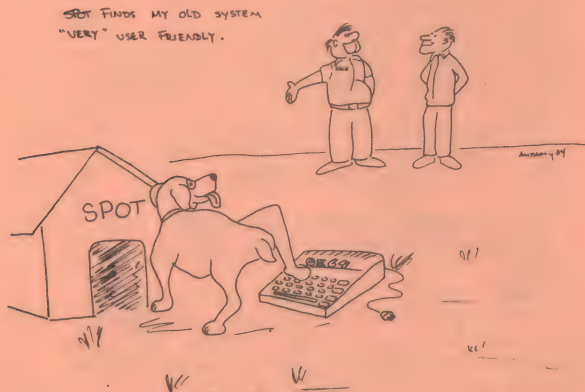
Likewise, the word ROLL allows you to rotate a number anywhere in the stack to the top. If the 5th number on the stack is a 7, the 5 ROLL will move it to the top of the stack.

The double precision words work the same as their single precision equivalents only on double numbers.

To declare a number as a double precision number, put a decimal point after the number (actually anywhere in the number is okay). Any size number, even a 1, can be declared double precision by using a decimal point (Example: 1. is a double precision number.).

The stack is now manipulated with the new double precision stack words. When you want to take a double precision signed number off the stack, you use "D.". If you are sure the numbers are unsigned, you can get the most range from Forth by using the word "UD." to print the unsigned double precision number from the top of the stack.

Learning Forth has been a pleasant experience for me. Although number crunching, in some cases, is easier in Forth, the sheer range of Atari BASIC will probably make it the preferred language for many applications. In areas where the number range is not important, give Forth a try. You, too, may be pleasantly surprised.



The Joys of Joysticks

by Joseph S. Kennedy - JACG

Okay, so with remote joysticks on sale for \$20 out there why an article on a standard stick? Well, if you're like me there's no room around Oscar (my 800) to keep the remote units without them getting misplaced. I can always follow the cord to find my sticks now. Besides since Jack now owns Atari and all you folks have raved about the Commodore (had to type that name three times- Oscar just hates it) monitor I guess I can come out of the closet with my Commodore joysticks.

When the retaining ring on an Atari stick went, I headed for Bradlees (that paragon of computer purveyors) for a replacement. I was pleasantly surprised by the \$7.99 stick. The handle is not round but rather triangular in shape with the apexes at 12, 4 and 8 o'clock. This makes positioning for games like Gamestar Baseball much easier. The large oblong fire button centered at the top makes the stick comfortable for lefties as well as righties. Being slightly smaller than the Atari stick it fits into the hand more comfortably also.

So while you still must remain in umbilical contact with your machine the Commodore joystick can make good games and the best machine even better. Who says we can't have the best of both worlds?

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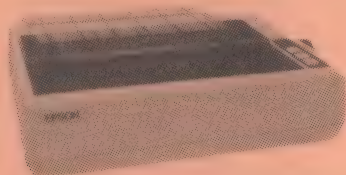
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HIRE A LAWYER IF YOU WANT TO LEARN FIG-FORTH

by Donald Forbes - JACG

Hire a lawyer if you want to be a fig-FORTH expert--and for just \$16.

Crazy? Not at all.

What better way to learn fig-FORTH than to have your own lawyer to explain it all to you? Lawyers are meticulous about crossing the t's and dotting the i's, they know how to express themselves, they don't make spelling errors, and are experts at discerning ambiguities.

Documentation of the public domain fig-FORTH on the two JACG FORTH disks 19 and 20 is sketchy at best, so that a clear explanation would be a great help.

It would also help if the lawyer had worked as an aeronautical and astronautical engineer for NASA, were a sponsor of the FORTH Standards team, and a member of the FORTH Interest Group. If he enjoyed flying, skydiving, writing and hacking on the side, he might not be such a dull person after all.

Where do you hire such a lawyer? And for \$16? Well, the lawyer happens to be C. Kevin McCabe, a Chicago trial attorney specializing in aviation disaster litigation, who is the author of FORTH FUNDAMENTALS. His 1983 book is the clearest explanation of fig-FORTH that I have seen to date--235 information-packed pages of clear prose in small type with complete explanations and no jokes and no cartoons. His book makes a perfect companion to Leo Brodie's Starting Forth, and provides all the fig-FORTH explanations that Brodie does not have time to cover.

If you have valFORTH you will appreciate this book even more. Although valFORTH is by far the best FORTH for the Atari, it does not pretend to teach fig-FORTH. This book fills in all the gaps.

McCabe is a leading authority on FORTH. The August BYTE carries his article on FORTH-83: EVOLUTION CONTINUES that you will not want to miss.

McCabe provides a number of insights that are not available elsewhere. His explanations of the differences between fig-FORTH and FORTH-79 are revealing:

"Fig-FORTH includes nearly 300 core words, but FORTH-79 has only 121. This does not mean that FORTH-79 is less useful or powerful than fig-FORTH. It is mainly a difference in philosophy. Fig-Forth includes numerous words for stack initialization, text parsing, and other system functions. FORTH-79 does not include many system-level words, since there is little need for words to alter the text interpreter or change the manner of stack initialization. As a result, FORTH-79 is easier for a novice or end-user to comprehend, but less useful for system-level programming...

"Fig-FORTH does not restrict user access to any part of the dictionary. All fields may be inspected and (with necessary precautions) changed at will. FORTH-79 applications which access the dictionary are allowed to address only the parameter fields of variables, constants, and words compiled by user-created defining words, and dictionary space that has been left by ALLOT; all other parameter fields, and the name, code, and link fields of all words, must not be accessed...

"In general, many of the 'bare bones' of FORTH, such as stack pointer values and initializers, are hidden and inaccessible to the user of FORTH-79. The philosophy of FORTH-79 is to provide all necessary high level operations, such as DEPTH, but not some of the more fundamental operations used primarily to construct the equivalent fig-FORTH operations. This makes FORTH-79 less complex and more oriented to the novice programmer or end-user, while fig-FORTH is more useful to the experienced or system-level programmer."

In FORTH FUNDAMENTALS McCabe also lays emphasis on the following point which is often overlooked:

"How does FORTH distinguish between signed and unsigned single numbers, memory addresses, bytes, and characters on the stack or in memory? Quite simply, it doesn't. The characteristics of each value exist only in the programmer's mind, in selecting operations where the value is an appropriate operand. FORTH does not keep track of the kind of values being represented, nor does it prevent or check for range errors. The burden is on you, the programmer, to insure that the contents of the stack and memory are those intended and that they represent values of the correct type...Again, it must be emphasized that FORTH does not keep track of the meaning of attributes of any value. As the programmer, you are solely responsible for transmitting the proper form of data to and from the stack or memory."

McCabe also suggests the proper way to design a FORTH program, something that I have not seen covered elsewhere:

"It is very tempting to design a program by first defining whatever small operations might be thought to be useful, then combining these from the bottom up.

"Nevertheless, this approach almost inevitably leads to inefficiency and confusion. By far the best approach is to design top down, but program bottom up. That is, create on paper or mentally a top down design for the application, starting with the overall goal and continuing until the task has been broken down to its most elemental components.

"Once this step has been completed, actually create the program from the bottom up. Define each of the fundamental operations and add them to the dictionary. Then combine these new words into more complex and comprehensive operations, and use them to define still more complex word definitions.

"In this manner, only words which are actually necessary for the application are added to the dictionary. Further, they are added in a logical manner and sequence, and can be individually tested for proper execution as they are created."

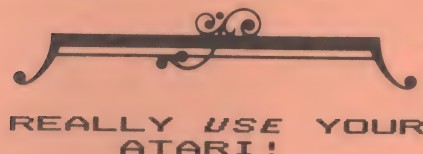
McCabe says at the outset of his book that "any material may be copied or transcribed for the nonprofit use of the purchaser." Coming from a lawyer, that is a refreshing change of pace.

As a final touch, it is worth mentioning that McCabe is a gentleman who gives credit where credit is due. Most books on FORTH seem to mention Charles H. Moore but once, and then merely in passing. McCabe, on the other hand, ends his book as follows:

"On FORTH's tenth birthday in 1979, Charles H. Moore addressed a convention of FORTH users in San Francisco. The full text of his speech was published in the public domain by the FORTH Interest Group. The reader is strongly encouraged to read the entire text, to fully appreciate Mr. Moore's unique contributions and abilities. The following abbreviated version is reprinted..."



San Leandro, CA Computer Club



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1. Any merchant selling or renting products, selling services, or in any way promoting same at JACG club meetings must have an advertisement in the current or previous month's issue of the JACG Newsletter, 1/4 page minimum.

2. The number of merchants shall be restricted to three per meeting unless special permission is granted by the President. Preference will be given to current advertisers.

3. Each merchant will occupy no more than one table space or its equivalent. The JACG does not guarantee availability of tables.

4. Merchants are responsible for the return of all furniture they use to its original location and to leave their area neat and clean before leaving.

5. Merchants will check with the Advertising Manager for permission to set up prior to the meeting to have their qualification confirmed.

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**NEXT MONTH!!
YOUR ARTICLE**

**Could Be In This Space
And Beyond.....**

Text Editors and Word Processors

by Gordon B. Hampton - JAGC

I am going to review the Atari Program-Text Editor (from APX), the Action! text editor (from OSS), the Homeword word processor (from Sierra Online) and the AtariWriter word processor (from Atari). A text editor is a program that lets you edit text or data in a file. A word processor includes a text editor, but also includes some print formatting functions that allow you to make your printed pages look "pretty".

I got the Atari Program-Text Editor with the Atari Macro Assembler. It is also available by itself from APX. It is a very good text editor, having all the editing features you could possibly want. Out of the 4 editors I am reviewing, it is the only one that allows you to edit a dataset that will not fit in memory (although both Homeword and AtariWriter support "chaining" files together). This editor is also the only one that automatically creates a backup file of the one you are editing. Some of the editing features available are: search, search with replace, search with verify and replace, block copy and delete, block read/write to disk, move the cursor to the top or bottom of the file and recover the last deleted line. This is the only editor of the 4 that only edits in "replace mode" (you must type "over" something or on a blank line, just like in BASIC). I find the commands hard to remember. They were mostly 2-4 letter abbreviations of the command (e.g. SRVF is search and replace with verify in the file). It did come with a reference card which makes this easier, but I believe the card only comes with it when you buy the assembler. I have only seen this program available on disk. You can go from the editor to the DOS menu and back easily enough, although you must save your dataset before doing so, and the editor has to be reloaded (from the DOS menu) to reenter it. This was the only program, out of the 4, that I could use my 128K RAMDISK (from Axlon) with. This comes in handy when you run out of space on real disks; you can save the file in RAM (on a virtual disk), go format a real disk in the meantime, then copy the file from RAM to disk. I also could copy the editor to the virtual disk, and load it from there, which makes going between the DOS menu and the editor very fast. If you do not want the Atari Macro Assembler, I would not recommend you buy it for the editor. Hopefully, the editor is still available from APX by itself.

The text editor that comes with Action! is the best editor I have seen anywhere for a microprocessor. It is the only one of the 4 I am comparing that supports "windowing". This means I can edit 2 files at once, each in its own "window". I can even move or copy selected lines from one window to the other. This was the only editor that does not have an easy way to get to the bottom of the file

(it does have an easy way to get to the top, however). Some of the other editing commands available are: add or delete a window, switch between windows, find a string, switch between "replace mode" (explained above) and "insert mode" (this pushes text already entered to the right as you enter new text), "paste" which allows the entering of deleted data (this is the means you move or copy data from one place to another, even between windows) and an "undo" command (undoes the changes made to the current line being edited). This was the only editor out of the 4 that did not come with a reference card. I found this not to be a real problem, because the manual had a summary on about 4 pages of all the editor commands, so I just made a photocopy of these pages to use for a reference card. I found this editor the easiest of the 4 to use. Its commands were easy to remember. All nonstandard Atari commands were 1 letter abbreviations pressed while pressing the CTRL and SHIFT keys (e.g. "U" is undo, "W" is write and "P" is paste). It is on a 24K "supercartridge" (it uses 8K at a time - including 5K additional RAM when used with DOS/XL) therefore it can be used with cassettes. Going to the DOS menu is as easy as it is in BASIC, with the same type of restrictions (a MEM.SAV dataset required or save the dataset before entering DOS). I would not recommend getting Action! just for the editor. If, on the other hand, you are interested in Action! (a high level language specifically designed for the 6502) anyway, the editor is a very nice bonus.

Homeword is a word processor from Sierra Online that comes on a disk. Homeword has a pretty good editor, although I did get tired of using its menus. I found the commands that can be entered without the menu hard to remember (e.g. OPTION-Z to align text right, OPTION-Y to move text and CTRL-E to jump forward 1 word). There is a reference card provided. This was the only editor of the 4 that does not use standard Atari DOS files. This means that Homeword can only be used to edit Homeword files. Also, unless Sierra Online comes out with its own spelling checker, you cannot use a spelling checker against one of its files. It also means that the only way you can copy files is to load it into the editor, then save it to another disk. I found that this discourages backing up files. I have 2 disk drives on a 48K Atari 800 computer. If I had only 1 disk drive, I would have to do a large number of disk swaps, judging by the way Homeword seems to be continuously loading from the program disk. The documentation implies it boots differently on 64K systems, so this may not be the case on them. Some of the editing commands available are: find, find with replace, move cursor to the top or bottom of the file, copy text, move text, erase text, insert erased text and switch between "insert mode" and "replace mode" (both explained above). Its print formatting commands includes: justify on the left, right, both left and right, or center the line(s). It has an indented point option (outline type of alignments). It also can

choose between normal, boldface (double strike) or underlined text. It gives a graphic look at the current page on the screen at all times, and you can preview what the actual page(s) will look like on a special 80 column screen (its hard to read but it does the job). If your text is too large to fit in memory, you can "chain" files together, that is, one file can request another to be printed. This word processor does boldface and underline by double printing. I have a Gemini-10X printer that has control characters for boldface and underlining that looks better than what gets printed from Homeword. For example, the underlines out of Homeword have spaces between each letter. It does have a way to enter ASCII control characters so you can send "commands" to your printer. I figured that this would be my answer. Wrong! The codes to get my printer to stop underlining include a hex 00. I found Homeword unwilling to accept a zero code. I even used my Disk Detective (from Datasoft, Inc.) to zap in a hex 00, but I found that Homeword uses a zero for its own purposes. The documentation was probably the best of the 4, including, in addition to a manual, and reference card, a tutorial in the form of a booklet and audio cassette tape. I would not recommend this word processor to anybody.

Last but not least, there is AtariWriter. It comes on a 16K cartridge and is the only decent word processor I know of that allows cassette files. I also got the APX AtariWriter Printer Drivers (only available on disk), which makes the program compatible with about 20 additional printers (including mine, the Gemini-10X). AtariWriter has built in support for the Atari models 820, 822, 825 and 1025. If you do not have one of these, and you do not have a driver, the manual tells you how to use this program anyway. For example, you can enter ASCII codes, so that you can use some of your printer's special features. This also works for printers that are supported by the program or a printer driver. I found that all codes that I tried, including a zero worked (a zero did not work on Homeword). The documentation for the printer drivers is complete. The documentation for AtariWriter is complete, but it seems to me to be trimmed down to just enough, nothing more. In addition to a regular reference card, it also includes a "helpful hints" card. It contained some information left out of the manual and was very useful. Its editing commands include: change text already entered from no underlines to underlines (or vice-versa), change text already entered from lower to uppercase (or vice-versa, this is the only editor of the 4 to have such a feature), move the cursor to the top or bottom of the file, delete, move, or copy a block of text, recover up to 30 screen lines of a deleted block of text (the manual recommends not deleting more than 30 lines at a time), and search and optionally replace text. Some of the print formatting commands (if your printer can handle them) are: justify left, right, both left and right or center the line(s). Double-column printing (like in some books

although few printers can handle this feature). Elongated print (double-width). Prompt for new page (useful for single page form feeds). It can also handle an outline format, printer controls (you specify the ASCII codes), multiple print styles including proportional spacing, superscripts and subscripts are supported. It features a preview screen utilizing the normal 40 by 22 screen, but allowing you to "scroll" for a page of up to 120 by 66. You can have one file "chain" to another (explained above), but you can only chain the files back to back (when one file begins, the other ends). I found the commands easy to remember and use (e.g. CTRL-P for paragraph start, SELECT-T for move cursor to top of file, and just a RETURN to end a paragraph). I am not completely satisfied with the way it handles underlines. It does not seem to support underlining a blank. I find it useful to have a line where I will sign a letter. However, I am able get around this problem using the ASCII codes for my printer, as long as I am underlining everything on that line that is "printed" (including specified blanks). This was the only editor that supports only "insert mode" (explained above). Although I personally prefer "replace mode" (explained above) because I use that type of editor the most, I find it easy to adapt to "insert mode". It is not completely setup for more than 1 disk drive. You can load and save files from drive 2 if you type in the "D2:" in front of the filename, but it does not remember the "D2:" so you must retype it every time. You cannot get a directory listing from any drive but "1". You also can only format a disk in drive 1. And the only way to get into the Atari DOS menu is to reboot the computer, without the cartridge in its slot. All these complaints are minor. I recommend this program to anyone that wants a good editor and word processor at an affordable price. I also recommend the printer driver to anyone with one of the following printers (this list was taken from the printer drivers' documentation): Atari 1020 or 1027, Epson RX-80, FX-80, MX-80 or MX-100 (with or without Graphtrax or Graphtrax Plus, including FT III models), Gemini-10 or Gemini-10X (the printer I have and the only driver I actually use), IDS-480, Mannesmann Tally, NEC-8023A, Okidata Microline 92A and 93A, and the C. Itoh Prowriter-8510. Be sure to check the package before buying the printer driver to be sure your printer is listed (in case of typos).

Files created with Action! and Atari Program-Text Editor are completely compatible. Files created with either of these two can be read into AtariWriter. As mentioned before, Homeword does not use standard DOS files, therefore it is not compatible with anything. A file created with AtariWriter can be read into one of the editors correctly only if there are no long paragraphs. The other editors (Action! and APX Atari Program-Text Editor) can only handle 120 character lines. This is no problem as long as you use the RETURN key a lot in AtariWriter, keeping paragraphs to under 120 characters (3 screen lines).

All 4 of these have features I did not mention. I tried to list what I thought were the more useful or unusual ones. I would recommend AtariWriter as the best overall editor and word processor of the 4. If you already have Action! or the APX Atari Program-Text Editor and you have no printer, it would not be of any use to you. Otherwise I think it is a good investment, even if you do not have a printer; you can edit any text file on disk or tape, including "listed" BASIC or assembler programs.

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GIVE A BIT THIS MONTH

MATHFACTS

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GIVE A BIT!!! GIVE A BIT!!! GIVE A BIT!!!

Disabling 800XL BASIC by Dave Webster - ACE of Syracuse

This article was written for those people who own diskettes that boot binary files with an AUTORUN.SYS menu loader. I will describe how to boot without holding the OPTION button down while booting.

The XL series enables and disables BASIC at address HEX \$D301, DECIMAL 54017. The 400/800s usually use this address for the input of joysticks on ports #3 and #4, which are omitted from the 800XL. The XL series uses this address for a variety of configurations. For example, bit 0 at HEX \$D301 says the operating system ROM (READ ONLY MEMORY) is active or you are using the RAM (RANDOM ACCESS MEMORY) below it. Bit 1 at HEX \$D301 says BASIC is enabled or disabled. One of the other bits at this address is used to tell if the DIAGNOSTIC ROM is enabled or disabled. The normal values for \$D301 are \$FF (BASIC DISABLED), \$FD (BASIC ENABLED). All we have to do is add some instructions to the loader program to access RAM and not BASIC, thus ridding you the bother of holding down the OPTION button to disable BASIC. If you are familiar with machine code you might try adding something like the following: LDA #\$FF, STA \$D301. Since Atari load files can have multiple segments (each one having its own start and end address) and all files start with two \$FF bytes, you could specify that a file starts at \$D301 and ends at \$D301, and consists of only one byte (\$FF). This would put a \$FF byte at \$D301, enabling RAM and disabling BASIC.

However, there is an easier way to do the same thing. The following steps will tell you how.

FOR ATARI DOS 2.05

1. Boot DOS while holding down the OPTION button.
2. Put a diskette, containing the AUTORUN.SYS loader, in the drive.
3. Hit the "E" option to rename the loader: AUTORUN.SYS,AUTORUN.OLD
4. Hit the "K" option to binary save AUTORUN.SYS at a starting address of D301 and ending address of D301. Type it like this: AUTORUN.SYS,D301,D301
5. Now, lastly, hit the "C" option to copy a file. This will be used to append AUTORUN.OLD to the just saved AUTORUN.SYS file. Type this: AUTORUN.OLD,AUTORUN.SYS/A

FOR OS/A+ OR DOS XL

1. Boot DOS while holding down the OPTION button.
2. Put a diskette, containing the AUTORUN.SYS loader, in the drive.
3. Type this command: RENAME AUTORUN.SYS AUTORUN.OLD
4. Type this command: SAVE AUTORUN.SYS D301 D301
5. Type this command: COPY - AF AUTORUN.OLD AUTORUN.SYS

You now can use this loader with any disk that has binary files on it! It will boot correctly without holding the OPTION button down.

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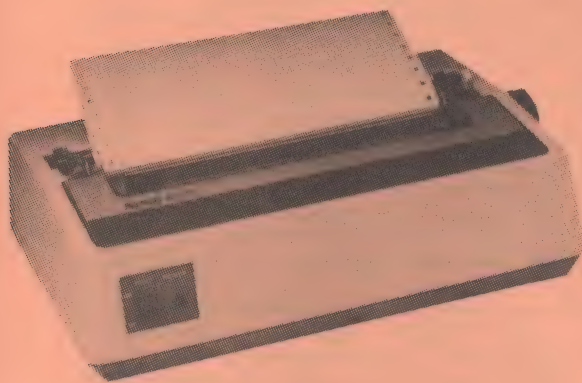
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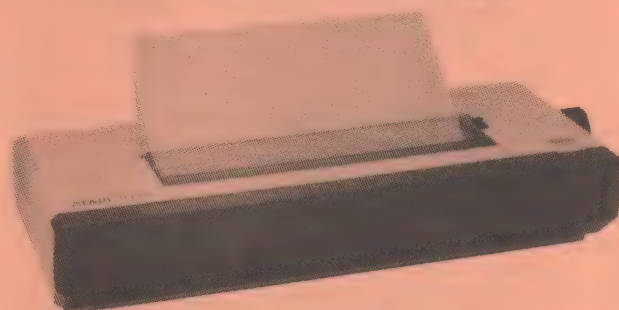
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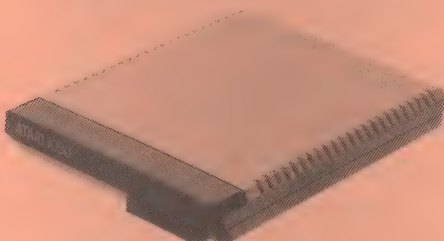
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NAPOLEON BUONAPARTE TEACHES FORTH

by Donald Forbes - JAGC

(201) 377-1208

Napoleon today stands for a rectangular piece of pastry, iced on top, with crisp, flaky layers filled with custard cream.

The name of Napoleon Buonaparte in the early eighteen hundreds struck fear and admiration in the hearts of the denizens of Europe. Beethoven dedicated a symphony in his honor and then tore up the title page in 1804 when Napoleon declared himself Emperor. Perhaps to the good, or we might not have heard the "marcia funebre sulla morte d'un eroe" as the black riderless horse accompanied Ike's casket in the procession down Pennsylvania Avenue.

Victory is all that counts in war, and none knew this better than Napoleon himself. If he were here today, he would want to be where the action is. It is more likely that he would be teaching computer science at an American technological institute than serving as a little corporal in the French army.

If he had written books on BASIC, FORTRAN and Pascal he would be looking for new worlds to conquer. FORTH is a new language with promising prospects but most universities do not teach it. How about a textbook to teach FORTH to college and junior-college students to prepare them to do battle in the cut-throat world of modern capitalism?

Napoleon was an able scholar and a respectable mathematician who would hold learned discussions on cosmology with Pierre Simon Marquis de Laplace, author of *Mechanique Celeste* in eight volumes. (Napoleon: You have discussed the system of the world but nowhere mentioned its creator. Laplace: "Excellency, I had no need of that hypothesis.")

Napoleon, if he did not know FORTH, would certainly seek expert help. What better collaborator than Richard Miller of Miller Microcomputer Services who furnishes a useful (and expensive) version of FORTH that runs on the IBM PC and the TRS-80? His FORTH provides both string handling and floating point arithmetic, which should certainly be mandatory today in any self-respecting FORTH package.

After completing the text, Napoleon's students should be able to compute Pythagorean triples (the integer sides of a right triangle, such as 3, 4 and 5), alphabetic sorts, two-dimensional arrays, factorials and recursive functions.

In war, victory is all that counts, the ends justify the means, and of the Principles of War the Principle of the Objective takes precedence over Mass, Momentum, Armor, Firepower and Surprise.

The textbook exists, complete with selected exercises (but no answers!) at the end of each chapter. The book is a valuable addition to the literature, at a reasonable price (in paperback) of \$17. Anybody who has access to floating point arithmetic and to string-handling functions will find it to be a useful source of information and examples. (Both of these exist in the valFORTH packages, and I look forward to trying them out.)

There is the old story that when Moses reached the Red Sea he exclaimed: "God help me." And the Lord responded: "I have good news and bad news. The good news is that I can part the waters of the Red Sea. The bad news is that you will have to file an environmental impact statement."

I wanted to give you the good news first so that you would not overlook a worthwhile book. The book is entitled *Beginning FORTH* by Dr. Paul M. Chirlian who is professor of electrical engineering and computer science at the Stevens Institute of Technology in Hoboken NJ--one of the first schools to insist on computers for their students. He bills himself as "one of the most prolific technical authors in the world today. His fifteen books cover a wide range of electronics and computer topics, including all three popular computer languages: BASIC, FORTRAN, and Pascal." Prolific means producing offspring in great abundance.

The bad news is that I cannot recall seeing a book put together in greater haste than this one. And I wanted to give you the bad news last so that you would not overlook the book's good points, particularly the fact that it addresses the crying need for teachable textbooks if FORTH is ever to achieve its full potential and become anything more than a comfortable old shoe for a few introverted individualistic computer hackers.

Napoleon was an irritant to his enemies. This book, too, is filled with irritants. I mention them only so that you will view them with detachment, and not let them blind you to the book's fundamental virtues.

First off is the copyright notice. Most FORTH is in the public domain (which is never mentioned), but he wants libraries to pay him 20 cents a page for copying--or \$48 for a \$17 book!.

Secondly, the book should have been titled *Beginning MMS FORTH* because most of the book revolves around MMS FORTH features. On page 52 he says that the XXXX command (or whatever) "is not a part of FORTH-79 but it is implemented by MMSFORTH and by other FORTH systems," and then repeats the same statement or variants forty more times through the rest of the book. He thanks A. Richard Miller in the Preface but never mentions that Dick Miller owns MMS FORTH. At least Ken Knecht in his *Invitation to FORTH* said on the back cover that it was MMS FORTH for the TRS-80!

He thanks his wife Barbara for copyediting, but simple words like occurrence and analogous are misspelled. I made no effort to count the many typographical errors.

Napoleon mentions the creator of FORTH but in a most backhanded fashion: "If we consider machine language to be at one level and assembly language and higher level languages to be at the second and third levels, then FORTH is at a fourth level. Incidentally, the name FORTH was originated by Charles H. Moore (the developer of FORTH) when he was working on a third generation computer. The new language seemed to give it the power of a fourth generation computer so Moore decided to call it FOURTH, but the computer could only accept five letter names. Thus, FORTH was used."

Our author claims he "covers debugging and tells you how to do it" but never mentions the fundamental fact that no program will ever contain a bug unless you the programmer put it in there in the first place.

The book supposedly "gives you the basics of Structured Programming" but in a cursory fashion, and the lone diagram in the section violates the fundamental rule of "one input one output."

One of the great names in symbolic logic (a cornerstone of computer science) is that of Jozef Lukasiewicz who proposed a propositional logic called three-valued logic, having a third truth value, neither true nor false. Reverse Polish notation is named after him, and he deserves better than a badly garbled spelling of his name.

The book contains the statement: "When you program in a high-level language you are limited to the commands that have been written into that language." In a book on FORTH, no less!

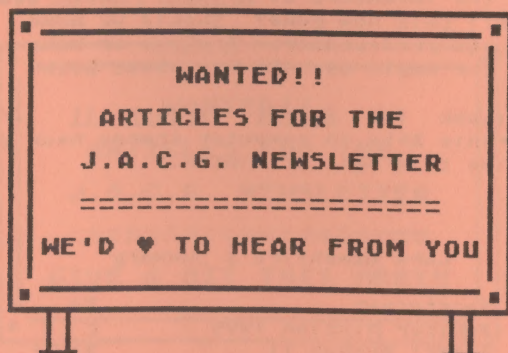
The primary attraction of FORTH in my view is that it will serve as a single software interface between the user and the computer, on the four levels of (1) assembler programming, (2) system programming, (3) program development and (4) application programming. This book sees FORTH as merely another language and the operating system aspects are never even hinted at.

When Chuck Moore developed FORTH he chose to use "word" in a technical sense to mean procedure or command or instruction, and "dictionary" to mean a library of procedures. Use of "word" in any other sense will only confuse a beginner. Yet here we find: "We shall write FORTH words in boldface type. This will separate the FORTH words from the rest of the text."

Will there be a revised edition of this book? I guess not. Will there be another FORTH book by this author? My guess is that we might see a book on APL with the help of Kenneth Iverson, or a book on LOGO with the help of Seymour Papert. Napoleon's army marches on its stomach, from one victory to another: "Soldiers, consider that from the summit of these pyramids, forty centuries look down upon you."

Remember the book: Beginning FORTH, by Paul Chirlian.

Friends, Forthers, countrymen, lend me your ears. I come to praise Napoleon, not to bury him. The good that men do lives after them. The evil is oft interred with their bones.



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Beyond Armageddon Adventures in Adventuring

by Lord Demonfire

Never let it be said that Lord Demonfire backs out on a promise. I will be reviewing Seastalker and Jupiter Mission 1999 in this column, as promised last month, plus another new program, but first I must make an apology.

To all those of you out there, thank you for sending your mail. The problem is that I will be reading it for the first time at about the same time you are reading this. Due to a technical foul-up in the mail system, I haven't received your mail (although I know there is some) at the time I am writing this article. Never fear: the problem has been rectified and I will set aside next month's column for the specific purpose of answering mail. Until then, hang in there. Now, on to the juicy stuff!

Seastalker by Infocom

Seastalker is the first prose adventure in the Infocom Junior Adventure Series. What this means, as I quickly found out, is that the program takes you by the hand and leads you through the adventure to the solution. On the other hand, I can recall one or two puzzles that, without intricate knowledge of the game, are impossible to solve. This turns out to be the major drawback of the program: the ease of completion coupled with the impossibility to quite figure out what is going on. But now, on to the good points.

As many adventures made by Infocom, Seastalker has exquisite packaging and detailed prose. You play the role of a marine scientist stationed in Fropton Bay. You are testing a revolutionary submarine called the Scimitar. Suddenly you receive an urgent message: the Aquadome, an undersea laboratory, is being attacked by a huge monster! You jump in your sub and zip off to find out what evil genius is behind this creation. When you reach Aquadome, Commander Bly explains the problem to you. I would like to go further but I will stop here to keep from ruining the adventure for you. Let's just say that it's full of action-packed suspense and some neat navigational scenes. It provides many hints and is ideal for the novice adventurer. However, I would not recommend it for those who have experience in the realm of adventuring.

Jupiter Mission 1999 by Avalon Hill

Jupiter Mission 1999 is one of the strangest - and most difficult - adventures I have ever encountered. This is not to say that it is not a worthwhile program, however. The idea is this: you are a normal, everyday person. But one morning, federal agents whisk you off and put you on a spaceship headed for one of the moons of Jupiter. It seems as though radio signals

are emanating from the area. In a meteor storm, however, the rest of the crew is killed and you must control the ship yourself and contact the aliens. This is no easy feat. The problem is there are no instructions for you; you must experiment and figure things out as you go along. Clue sheets are included, but the brief documentation suggests strongly that you do not use them. Personally, I feel that the clue sheets should be used unless you are a hard-core adventurer. It may save you hours of suicidal frustration.

In this program, everything is done with the joystick. There are many different segments you must complete to achieve your goal (get through the meteors, repair the ship, get to the Jupiter system, etc.) Each requires split-second timing on the joystick, which can be discouraging for some of us. Thus, Jupiter Mission 1999 would not be my first choice in an adventure. I do not approve of their not including documentation to make it more challenging, and many of the segments are still too difficult to complete even with the clue sheets. Therefore, if you like mental puzzles, stick to an Infocom adventure.

I would like to take this space to just run through some speculation with you. What was your favorite game of 1983? Archon, you say? What about those of us who have beaten the computer so many times in Archon it's not even funny? You want something new, but similar, you say? How about giving each side FOUR magic-users (WOW!)? And how about dividing the board up into four demesnes - fire, air, earth, and water - with each character having strengths and weaknesses in each demesne? But you want a new set of characters, too? How about something like Ifrits, Thunderbirds, Salamanders, Sirens, Krakens, Giants, and Behemoths? You want more? How about four demons summonable by each side, like Juggernauts, Wraiths, Gorgons, and Chimeras? Do you want new names for the magic-users? How about (with respect to Piers Anthony) Adepts? What about spells? How about Banish, Weaken, Release, and all the other Archon spells? How about a last-ditch effort to turn the tables if you're losing badly? Something like an Apocalypse, maybe? What else? New names for the sides (Light and Dark can get boring)? Two very opposite things, like Order and Chaos? Who would you want to write this game? How about Electronic Arts, the inventors of Archon? What would you call this new game? Should we name it after its predecessor, Archon, or name it after the magic-users? How about both?

(Look for Adept: Archon II from Electronic Arts in computer stores near you sometime this fall or winter.)

Lord Demonfire's Summary

Seastalker	B+
Jupiter Mission 1999	C
Adept: Archon II	A+

Well, that's it for now! Remember to check back next month for when Lord Demonfire answers mail. But for now...

May the wind always be at you back,
The sun on your face,
The path easy,
And your computer bug free.

Farewell!



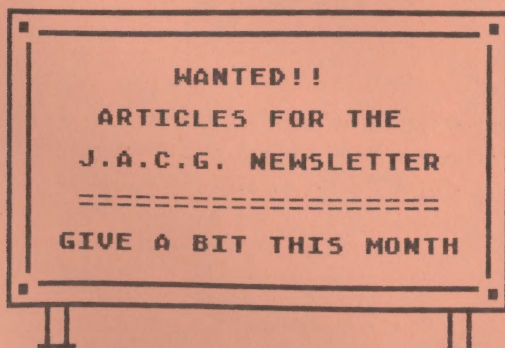
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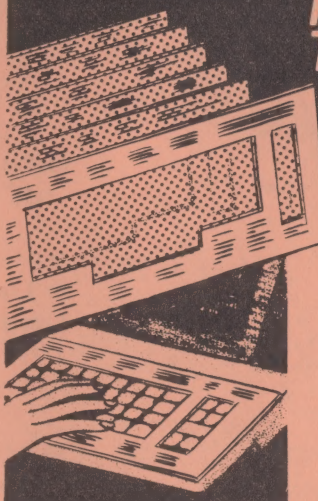
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